

2012-13 RABBIT HUNTING COOPERATOR SURVEY REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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METHODS

The 2012-13 Rabbit Hunting Cooperator Survey Report is a summary of two annual surveys conducted by the Kentucky Department of Fish and Wildlife Resources (KDFWR) to estimate rabbit production, hunter effort, and hunter success. First, the Rabbit Hunter Log Survey is a diary-type hunting log used to record information from hunts throughout the season. Hunters were asked to keep the log to date as the hunting season progressed, and at the season's conclusion, logs were mailed to the KDFWR for analysis.

The Mail Carrier Survey represents the second survey used to monitor rabbit populations across the state. Mail carriers recorded rabbit and quail observations as they traveled their rural delivery routes during the last full week of July (6 delivery days).

Survey cards provided space for observations of rabbits for each of the survey days. Observers also recorded the number of days surveyed, the length of the route, and the total miles driven. The mail carrier data is used to forecast the upcoming hunting season, monitor the population, and estimate rabbit productivity.

All surveys are strictly voluntary and we strongly encourage all Kentucky rabbit hunters and rural mail carriers to participate in these surveys. Hunter cooperators receive this report, detailing hunting season results, and expectations for the upcoming season. Cooperators also receive a new hunting log for the upcoming season and a small gift of appreciation for their participation. Participating mail carriers receive a subscription to *Kentucky Afield* magazine for their support.

RESULTS AND DISCUSSION

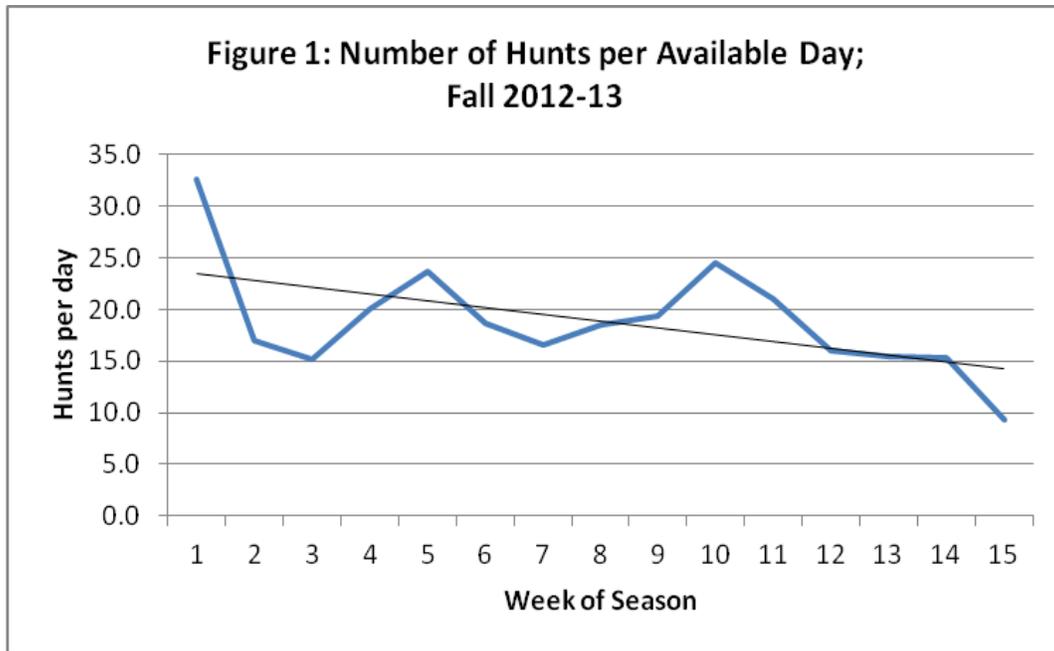
I. Rabbit Hunter Log Survey

Hunting logs were received from 119 hunters who averaged 16 hunting trips each for the season. Data was grouped into weekly and monthly subsets. Beginning in 2011, rabbit data is no longer grouped into physiographic region subsets. Instead, data will be grouped into 4 regional subsets; west, central, bluegrass, and east (Appendix A) to identify trends across the state.

"Tidbits" from hunting logs:

- Hunter cooperators logged 1,880 hunts in 2012-13
- Average size of hunting party = 2 hunters
- Average length of hunt = 3.6 hours
- Average number of dogs used per hunt = 4
- Total number of counties that cooperators hunted in = 108

Hunting pressure declined as the season progressed (Figure 1).



Although hunting pressure appears to decrease as the season moves forward, the rate of harvest consistently increases as the season moves into February. Table 1 below lists the percentage of jumped rabbits killed by hunters. Each year hunters are more successful later in the season, likely because rabbits become easier to detect as suitable cover begins to break down.

Percent of Jumped Rabbits that were Killed

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<u>November</u>	45.3%	40.8%	43.6%	34.0%	38.8%	45.9%	42.1%	43.9%	43.7%	42.3%	41.4%
<u>December</u>	46.1%	45.4%	44.3%	42.2%	42.8%	45.8%	44.7%	49.9%	48.0%	47.4%	47.1%
<u>January</u>	49.5%	44.6%	49.7%	43.4%	46.6%	47.0%	46.3%	50.1%	47.5%	49.0%	48.5%
<u>February</u>	62.7%	40.8%	45.0%	50.6%	49.0%	51.8%	49.0%	56.0%	45.6%	48.7%	45.5%
% change											
Nov-Feb	17.3%	0.0%	1.4%	16.5%	10.2%	5.9%	7.0%	12.1%	1.9%	6.4%	4.1%

Average % change = 7.5%

Hunter participation in this survey has declined over the last few years. However, we saw a slight increase last year (Table 2).

Table 2. Summary Statistics from the Rabbit Hunter Log Survey in Kentucky, 2008-2013.

Statistics	2008-09	2009-10	2010-11	2011-12	2012-13
Cooperators	147	139	128	114	119
Hunts	2,006	1,827	1,667	1,959	1,880
Counties	104	98	106	105	108
Hunts/Hunter	14	13	13	17	16
Hours Hunted	7460.1	6588.9	6114.4	7393.02	6861.91
Dogs Used	7,632	7,003	6,769	8,586	7,958
Total Rabbits Jumped	10,910	10,316	11,163	12,875	12,782
Total Rabbits Harvested	4,526	4,703	4,892	5,702	5,436
Total Rabbits Wounded	364	286	305	334	387
Hunting Mortality (%)	45	48	46	47	45

Over the past five hunting seasons, hunting mortality (harvested and wounded individuals) remained less than 50% of the rabbits jumped (Table 2).

- Total rabbits jumped = 6.8/hunt
- Number of rabbits jumped per hour = 1.9/hour
- Number of rabbits killed per hunt = 2.9/hunt

Sample sizes for Appalachian cottontails are far too low to indicate any change in the population or in hunter effort and success. Harvest and jump rates by species were calculated by the following assumptions: 1) if Appalachian cottontail or swamp rabbits were jumped, it was assumed Appalachian or swamp rabbits were being hunted, 2) if eastern cottontails were jumped and an Appalachian cottontail or swamp rabbit was jumped, it was assumed the Appalachian cottontail or swamp rabbit was being hunted, and 3) if no rabbits were jumped, it was assumed the eastern cottontail rabbit was being hunted (because cottontails comprise 98% of the harvest and are the most common).

Table 3. Rabbit jump and harvest rates by species in Kentucky, 2010-2013.

Year	Eastern Cottontail			Swamp			Appalachian		
	10-11	11-12	12-13	10-11	11-12	12-13	10-11	11-12	12-13
Total Hunts	1,557	1,873	1,801	67	80	44	4	7	5
Jumped/Hunt	7.02	6.73	7.00	3.45	3.36	3.73	1.50	1.29	1.40
Jumped/Hour	1.88	1.77	1.46	1.12	0.70	0.90	0.29	0.24	0.29
Harvested/Hunt	3.05	2.98	2.98	1.96	1.39	1.48	0.25	0.71	0.40
Harvested/Hour	0.82	0.79	0.62	0.63	0.29	0.36	0.05	0.13	0.08
Wounded/Hunt	0.20	0.18	0.21	0.01	0.05	0.05	0.00	0.00	0.00
Wounded/Hour	0.05	0.05	0.04	0.00	0.01	0.01	0.00	0.00	0.00

II. Mail Carrier Survey Results

The Mail Carrier Survey provides a glimpse of what we can expect for the upcoming hunting season. The survey is the oldest in the program being completed for 53 years. Although no population estimates can be derived from this data, it does provide valuable trend information showing whether the population is up, down, or stable.

2013 Survey Statistics

- Mail Carriers returned 789 survey cards (52% response rate)
- Total miles driven = 273,993
- Total rabbits seen = 6,638
- Statewide observation rate = 2.42 rabbits/100 miles traveled

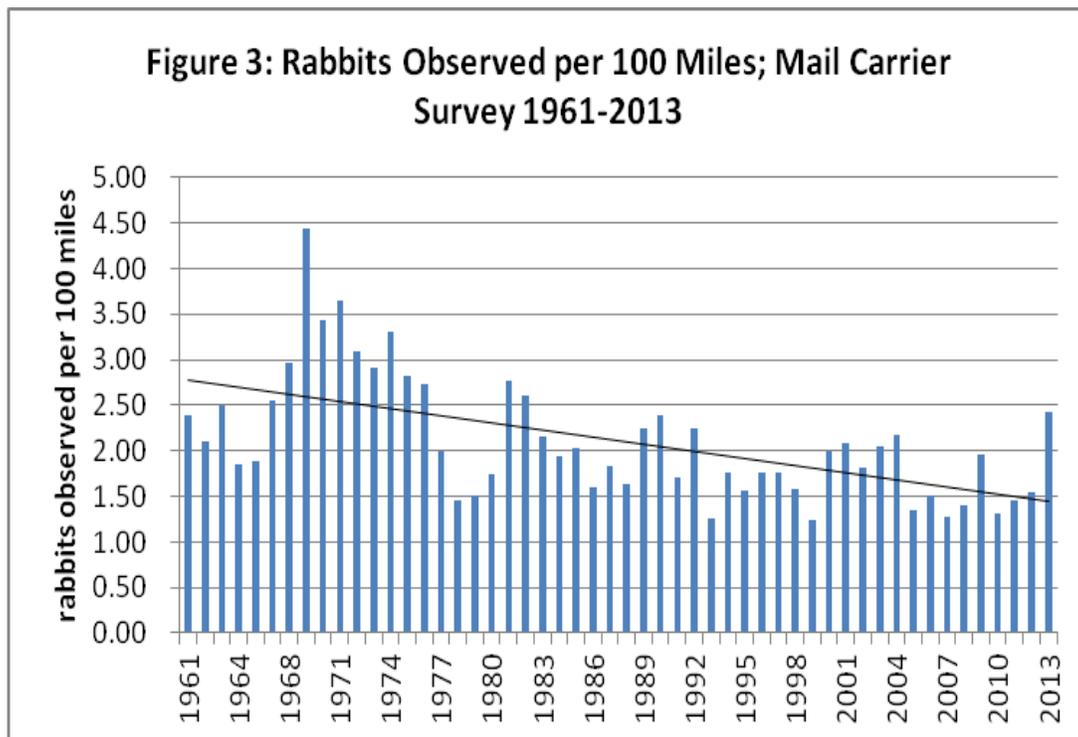
Beginning last year, mail carrier data was no longer analyzed across eight different physiographic regions. Analyzing data across eight regions resulted in small sample sizes which can be far less accurate. Data is now grouped into 4 regions; west, central, bluegrass and east (appendix A).

Table 4. Mail Carrier indices and rates of change in Kentucky, 1961-2013.

	TOTAL RABBITS/100 MILES			PERCENT CHANGE	
REGION	MEAN (average)			MEAN (average)	
	1961-2013*	2012	2013	1961-2013	2012 to 2013
West	N/A	0.72	1.30	N/A	+80.5%
Central	N/A	1.81	2.86	N/A	+58.0%
Bluegrass	N/A	1.78	2.75	N/A	+54.5%
East	N/A	1.95	2.72	N/A	+39.5%
Statewide	2.11	1.55	2.42	+0.8%	+56.0%

*N/A = data was not analyzed by west, central, bluegrass, east until 2011

Over the last 53 years of this survey, the decline in the rabbit population is evident (Figure 3). The severe drop in population levels following the winters of 1977 and 1978 was dramatic and populations have been slow to recover. The overall drop in rabbit numbers since the late 1960's can be generally attributed to habitat loss because of land use changes and cleaner agricultural practices. However, this year's survey results show the highest number of observed rabbits since 1982. The increase is likely attributed to excellent breeding season weather and an increase in habitat across the state.



SUMMARY

The Mail Carrier Survey and the Rabbit Hunter Log Survey appear to be tracking each other well. Therefore, we can make predictions based on the Mail Carrier Survey results. Breaking down data by physiographic regions generally makes predictions more difficult as sample sizes become smaller compromising reliability. Because of this, we now group mail carrier data into 4 regions of the state; west, central, bluegrass, and east. Because this is only the third year that we have grouped data this way we are unable to make long-range comparisons. However, this year the Central Region of the state led all regions in the number of rabbits observed, followed by the Bluegrass Region. The Central Region is home to the massive Conservation Reserve Enhancement Program (CREP) Area. An abundance of quality habitat is likely what contributed to the increase in rabbit observations in this region.

Overall the 2012-13 rabbit season was good. Over the last 20 years, the population has remained fairly stable with bumps up and down. Last year, harvest rates and jump rates remained stable when compared to the previous season. The Mail Carrier Survey shows a 56% increase in the number of observed rabbits statewide between 2012 and 2013, meaning there should be plenty of rabbits available for harvest this fall.

ACKNOWLEDGMENTS

We would like to say a special thanks to all those who have participated in the various small game surveys over the years. Your cooperation provides us with valuable data necessary to make wise management decisions regarding rabbit populations and hunting seasons. With that in mind, we ask that you recruit your friends and neighbors who also rabbit hunt to join you in being a hunting cooperator. We need many more cooperators to accurately track rabbit populations across the state.

Hunting logs can be found on the internet (<http://fw.ky.gov/sghelp.asp>), or by contacting the Kentucky Department of Fish and Wildlife Resources at #1 Sportsman's Lane, Frankfort, KY 40601 (1-800-858-1549). Thank you to all who participated this year, and we hope to hear from you and all of your hunting partners in next season's surveys. We will have a new style of hunting cap available next year, so be sure to send in your log!

Cover image provided by Wes Siegrist (www.artofwildlife.com/miniaturepaintings23.html)

